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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/682,536 | CUMMINGS, SCOTT A. | |
| | Examiner | Art Unit | |
| | Sai-Ming Chan | 2616 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims 25-36** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 25 claims a signal bearing medium where the specification specifically mentions examples of computer bearing medium that include media that transmit a carrier wave (Page 35, paragraph 124, lines 3-5) which do not fall under statutory subject matter.

Claims 26-36 are also rejected by virtue of their dependency on claim 25.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-3, 13-14, 17, and 25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bunn et al. (U.S. Patent Publication # 20070058640),** in view of **Cloonan et al. (U.S. Patent Publication # 2004000863),** and further in view of **Danforth (U.S. Patent Publication #20050038880)**

Consider **claim 1,** Bunn et al. clearly disclose and show a method for improving channel efficiency in a broadband communication system that complies with a Data Over Cable Service Interface Specification (DOCSIS) standard, comprising:

communication between a first device (fig. 1 (104 (cmts)); paragraph 65) that supports at least one proprietary communication parameter (paragraph 71) associated with bandwidth utilization (paragraph 22, lines 11-17) and other devices (fig. 1 (108 (cm)); paragraph 70) that support said at least one proprietary communication parameter (paragraph 99 (presence of extended protocol descriptor));

receiving registration information (fig. 4 (402); paragraph 90) from a second device, wherein said registration information (paragraph 92) indicates that said second device supports said at least one proprietary communication parameter (fig. 4 (402( extended protocol)); paragraph 92); and

assigning said second device to said channel (paragraph 103 – transmission opportunity) in response to receiving said registration information.

However, Bunn et al. do not specially disclose the logical channel.

In the same field of endeavor, Cloonan et al. clearly show the assignment of logical channel (fig. 2 (10 (L.C. A1 & A2)); paragraph 26) for the CM to transmit data to CMTS.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by

Bunn et al., and deploy the logical channels, as taught by Cloonan et al., so that communication can be conducted efficiently.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose proprietary parameters.

In the same field of endeavor, Danforth clearly shows the use of proprietary parameters (paragraph 0041 (bandwidth); paragraph 0066 (through proprietary parameters)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., deploy the logical channels, as taught by Cloonan et al., and demonstrate the proprietary parameters, as taught by Danforth, in order to ensure that the bandwidth efficiency is optimized.

Consider **claim 2,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method, wherein said first device comprises a cable modem termination system (fig. 1 (104 (cmts)); paragraph 65) and said second device comprises a cable modem (fig. 1 (108 (cm)); paragraph 70).

Consider **claim 3,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

In the same field of endeavor, Cloonan et al. clearly show the modulation rate (paragraph 26, lines 10-16).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., in order to ensure that the bandwidth efficiency is optimized.

Consider **claim 13,** Bunn et al. clearly disclose and show a cable modem termination system (CMTS) (fig. 5; paragraph 38) for improving channel efficiency in a cable modem system that complies with a Data Over Cable Service Interface Specification (DOCSIS) standard (paragraph 70), comprising:

a registration module (paragraph 99) adapted to receive registration information from a cable modem, wherein said registration information indicates that said cable modem supports said at least one proprietary communication parameter (paragraph 99 (presence of extended protocol descriptor in the message.

However, Bunn et al. do not specially disclose the logical channel.

In the same field of endeavor, Cloonan et al. clearly show an upstream channel manager (abstract (high level MAP scheduler); fig. 5 (16 (high level MAP scheduler)) paragraph 26, (PHY, for physical channel, can be connected to several logical channels. The low level MAP Scheduler (8) keeps track of which logical channels are tied to which physical channel. The high level MAP scheduler controls the low level MAP scheduler) adapted to establish a logical channel for communication with cable modems that support at least one proprietary communication parameter associated with bandwidth utilization; and

the assignment of logical channel (fig. 5 (10 (L.C. A1, A2, B1, B2, C1 & C2)); paragraph 26 (PHY, for physical channel, can be connected to several logical channels. The low level MAP scheduler (8) keeps track of which logical channels are tied to which physical channel.)) for the CM to transmit data to CMTS, and

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to deploy the logical channels, as taught by Cloonan et al., in order to ensure that the bandwidth efficiency is optimized.

Consider **claim 14,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

In the same field of endeavor, Cloonan et al. clearly show the modulation rate (paragraph 26, lines 10-16).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., in order to ensure that the bandwidth efficiency is optimized.

Consider **claim 17,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

In the same field of endeavor, Cloonan et al. clearly show upstream channel manager is adapted to determine whether or not to establish said logical channel (paragraph 33; decide on which connections to make in order to prevent data burst interference).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., in order to ensure that the bandwidth efficiency is optimized.

Consider **claim 25,** Bunn et al. clearly disclose and show a computer program product (fig. 23; paragraph 290) comprising a computer useable medium having computer program logic (paragraph 294) recorded thereon for enabling a processor (fig.

23 (2303)) to facilitate communication (fig. 23 (2302)) between devices in a broadband communication system () that complies with a Data Over Cable Service Interface Specification (DOCSIS) standard (paragraph 70), said computer program logic comprising:

means for enabling the processor to establish a channel for communication between a first device (fig. 1 (104 (cmts)); paragraph 65) that implements at least one proprietary communication parameter (paragraph 71) associated with bandwidth utilization (paragraph 22, lines 11-17) and other devices (fig. 1 (108 (cm)); paragraph 70) that support said at least one proprietary communication parameter (paragraph 99 (presence of extended protocol descriptor));

means for enabling the processor to receive registration information (fig. 4 (402); paragraph 90) from a second device, wherein said registration information indicates that said second device supports said at least one proprietary communication parameter (fig. 4 (402( extended protocol)); paragraph 92); and

means for enabling the processor to assign said second device to said channel (paragraph 103 – transmission opportunity) in response to receiving said registration information.

However, Bunn et al. do not specially disclose the logical channel.

In the same field of endeavor, Cloonan et al. clearly show the assignment of logical channel (fig. 2 (10 (L.C. A1 & A2)); paragraph 26) for the CM to transmit data to CMTS.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to deploy the logical channels, as taught by Cloonan et al., in order to ensure that the bandwidth efficiency is optimized.

Consider **claim 26,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the computer program product, wherein said first device comprises a cable modem termination system (CMTS) (fig. 1 (104 (cmts)); paragraph 65)) and said second device comprises a cable modem (fig. 1 (108 (cm)); paragraph 70).

Consider **claim 27,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the computer program as described.

In the same field of endeavor, Cloonan et al. clearly show the modulation rate (paragraph 26, lines 10-16).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., in order to ensure that the bandwidth efficiency is optimized.

**Claims 4, 15 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bunn et al. (U.S. Patent Publication # 20070058640)** in view of **Cloonan et al. (U.S. Patent Publication # 2004000863), and in view of Vogel et al. (U.S. Patent # 7089580).**

Consider **claim 4,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the base rate.

In the same field of endeavor, Vogel et al. clearly show a base rate (column 9, lines 34 (base rate is 160000 per sec)) for data transmission.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al.,,as modified by Cloonan et al., and identify the base rate, as taught by Vogel et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 15,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the base rate of the CMTS.

In the same field of endeavor, Vogel et al. clearly show a base rate (column 9, lines 34 (base rate is 160000 per sec)) for data transmission.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al.,,as modified by Cloonan et al., and identify the base rate, as taught by Vogel et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 28,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the base rate of the CMTS.

In the same field of endeavor, Vogel et al. clearly show a base rate (column 9, lines 34 (base rate is 160000 per sec)) for data transmission.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al.,,as modified by Cloonan et al., and identify the base rate, as taught by Vogel et al., in order to show that the bandwidth efficiency is optimized.

**Claims 5, 16 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bunn et al. (U.S. Patent Publication # 20070058640)** in view of **Cloonan et al. (U.S. Patent Publication # 2004000863), and in view of Graham Mobley et al. (U.S. Patent Publication # 20030053493).**

Consider **claim 5,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the alpha value.

In the same field of endeavor, Graham Mobley et al. clearly show an alpha value (paragraph 319, lines 12-13) for data transmission.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and identify the base rate, as taught by Graham Mobley et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 16,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the alpha value.

In the same field of endeavor, Graham Mobley et al. clearly show an alpha value (paragraph 319, lines 12-13) for data transmission.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and identify the base rate, as taught by Graham Mobley et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 29,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the alpha value.

In the same field of endeavor, Graham Mobley et al. clearly show an alpha value (paragraph 319, lines 12-13) for data transmission.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and identify the base rate, as taught by Graham Mobley et al., in order to show that the bandwidth efficiency is optimized.

**Claims 6-8, 18-20, and 30-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bunn et al. (U.S. Patent Publication # 20070058640)** in view of **Cloonan et al. (U.S. Patent Publication # 2004000863), and in view of Rakib et al. (U.S. Patent Publication # 20050025145).**

Consider **claim 6,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the Upstream Channel Descriptor (UCD) message.

In the same field of endeavor, Rakib et al. clearly show the Upstream Channel Descriptor (UCD) message (paragraph 63).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., and generate UCD messages, as taught by Rakibet al., in order to guarantee smooth data transmission.

Consider **claim 7,** and **as applied to claim 6 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method, wherein said generating a message having a version field (fig. 9b (918); paragraph 133) or a type field (fig. 9b (922); paragraph 133) that comprises a value not provided for by the DOCSIS standard.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the generating of a Upstream Channel Descriptor (UCD) message.

In the same field of endeavor, Rakib et al. clearly show the Upstream Channel Descriptor (UCD) message (paragraph 63).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., and generate UCD messages, as taught by Rakibet al., in order to guarantee smooth data transmission.

Consider **claim 8,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., as modified by Cloonan et al., and to send a UCD message to intended devices, as taught by Rakibet al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 18,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the UCD messages.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., as modified by Cloonan et al., and to send a UCD message, as taught by Rakibet al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 19,** and **as applied to claim 18 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method, wherein said generating a message having a version field (fig. 9b (918); paragraph 133) or a type field (fig. 9b (922); paragraph 133) that comprises a value not provided for by the DOCSIS standard.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the generating of a Upstream Channel Descriptor (UCD) message.

In the same field of endeavor, Rakib et al. clearly show the Upstream Channel Descriptor (UCD) message (paragraph 63).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and generate UCD messages, as taught by Rakibet al., in order to guarantee smooth data transmission.

Consider **claim 20,** and **as applied to claim 18 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., as modified by Cloonan et al., and to send a UCD message to intended devices, as taught by Rakibet al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 30,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show the method as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the Upstream Channel Descriptor (UCD) message.

In the same field of endeavor, Rakib et al. clearly show the Upstream Channel Descriptor (UCD) message (paragraph 63).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., and generate UCD messages, as taught by Rakibet al., in order to guarantee smooth data transmission.

Consider **claim 31,** and **as applied to claim 30 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program, wherein said generating a message having a version field (fig. 9b (918); paragraph 133) or a type field (fig. 9b (922); paragraph 133) that comprises a value not provided for by the DOCSIS standard.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose the generating of a Upstream Channel Descriptor (UCD) message.

In the same field of endeavor, Rakib et al. clearly show the Upstream Channel Descriptor (UCD) message (paragraph 63).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and deploy the logical channels, as taught by Cloonan et al., and generate UCD messages, as taught by Rakibet al., in order to guarantee smooth data transmission.

Consider **claim 32,** and **as applied to claim 30 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program as described.

However, Bunn et al., as modified by Cloonan et al., do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., as modified by Cloonan et al., and to send a UCD message to intended devices, as taught by Rakibet al., in order to show that the bandwidth efficiency is optimized.

**Claims 11-12, 23-24, and 35-36** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bunn et al. (U.S. Patent Publication # 20070058640)** in view of **Cloonan et al. (U.S. Patent Publication # 2004000863), and in view of Limb et al. (U.S. Patent Publication # 20070076717).**

Consider **claim 11,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method, wherein said receiving said registration information from a second device comprises:

sending a first message (fig. 4 (402); paragraph 298; cmts sends message to cm for proprietary features capability) to said second device to determine if said second device implements any proprietary features;

receiving a message (fig. 4 (402); paragraph 90) from said second device, wherein said message indicates support by said second device for said at least one proprietary communication parameter; and

sending a second message (fig. 4 (404); paragraph 93) to said second device, wherein said second message indicates support by said first device for said at least one proprietary communication parameter.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

Consider **claim 12,** and **as applied to claim 1 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method as described.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

Consider **claim 23,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a CMTS, wherein said registration module is adapted to send a first message (fig. 4 (402); paragraph 298; cmts sends message to cm for proprietary features capability) to said cable modem to determine if said cable modem implements any proprietary features, to receive a message (fig. 4 (402); paragraph 90) from said cable modem, wherein said message indicates that said cable modem supports said at least one proprietary communication parameter, and to send a second message (fig. 4 (404); paragraph 93) to said cable modem, wherein said second message indicates that said CMTS supports said at least one proprietary communication parameter.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

Consider **claim 24,** and **as applied to claim 13 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method as described.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency

Consider **claim 35,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program, wherein said receiving said registration information from a second device comprises:

means for enabling the processor to send a first message (fig. 4 (402); paragraph 298; cmts sends message to cm for proprietary features capability) to said second device to determine if said second device implements any proprietary features;

means for enabling the processor to receive a message (fig. 4 (402); paragraph 90) from said second device, wherein said message indicates support by said second device for said at least one proprietary communication parameter; and

means for enabling the processor to send a second message (fig. 4 (404); paragraph 93) to said second device, wherein said second message indicates support by said first device for said at least one proprietary communication parameter.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

Consider **claim 36,** and **as applied to claim 25 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program as described.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency

**Claims 9-10, 21-22, and 33-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bunn et al. (U.S. Patent Publication # 20070058640)** in view of **Cloonan et al. (U.S. Patent Publication # 2004000863), and in view of Limb et al. (U.S. Patent Publication # 20070076717), and further in view of Rakib et al. (U.S. Patent Publication # 20050025145).**

Consider **claim 9,** and **as applied to claim 8 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method, wherein said sending said message only to devices that support said at least one proprietary communication parameter comprises:

accessing a database of identifiers (fig.5 (502-514( cmts uses cm id to access protocol indicator; paragraph 98)) of devices that support said at least one proprietary communication parameter; and

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a unicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

However, Bunn et al., as modified by Cloonan et al., and further modified by Limb et al., do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a, b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a unicast message, as taught by Limb et al., and to send a UCD message, as taught by Rakib et al., in order to ensure smooth data transmission.

Consider **claim 10,** and **as applied to claim 8 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a method, wherein said sending said message only to devices that support said at least one proprietary communication parameter comprises:

accessing an identifier (fig.5 (502-514( cmts uses cm id to access protocol indicator;paragraph 98)).

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a multicast message.

In the same field of endeavor, Limb et al. clearly show the generating a multicast message (paragraph 51).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

However, Bunn et al., as modified by Cloonan et al.,and further modified by Limb et al., do not specially disclose sending the UCD message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send multicast message, as taught by Limb et al., and to send a UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 21,** and **as applied to claim 20 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a CMTS, wherein said upstream channel manager is adapted to access a database of identifiers (fig.5 (502-514( cmts uses cm id to access protocol indicator; paragraph 98)) of cable modems that support said at least one proprietary communication parameter.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a unicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

However, Bunn et al., as modified by Cloonan et al., and further modified by Limb et al., do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a, b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a unicast message, as taught by Limb et al., and to send a UCD message, as taught by Rakib et al., in order to ensure smooth data transmission.

Consider **claim 22,** and **as applied to claim 20 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a CMTS, wherein said upstream channel manager is adapted to access an identifier that identifies a plurality of cable modems that support said at least one proprietary communication parameter, and to generate a message addressed to said plurality devices identified by said identifier.

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a multicast message.

In the same field of endeavor, Limb et al. clearly show the generating a multicast message (paragraph 51) to a plurality of cable modems.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

However, Bunn et al., as modified by Cloonan et al.,and further modified by Limb et al., do not specially disclose sending the UCD message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send multicast message, as taught by Limb et al., and to send a UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 33,** and **as applied to claim 32 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program, wherein said sending said message only to devices that support said at least one proprietary communication parameter comprises:

means for enabling the processor to accessing a database of identifiers (fig.5 (502-514( cmts uses cm id to access protocol indicator; paragraph 98)) of devices that support said at least one proprietary communication protocol; and

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a unicast message.

In the same field of endeavor, Limb et al. clearly show the generating a unicast message (paragraph 45).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a unicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

However, Bunn et al., as modified by Cloonan et al., and further modified by Limb et al., do not specially disclose sending the UCD messages to the intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a, b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a unicast message, as taught by Limb et al., and to send a UCD message, as taught by Rakib et al., in order to ensure smooth data transmission.

Consider **claim 34,** and **as applied to claim 32 above,** Bunn et al., as modified by Cloonan et al., clearly disclose and show a computer program, wherein said sending said message only to devices that support said at least one proprietary communication parameter comprises:

means for enabling the processor to access an identifier (fig.5 (502-514( cmts uses cm id to access protocol indicator); paragraph 98)).

However, Bunn et al. as modified by Cloonan et al., do not specially disclose the sending of a multicast message.

In the same field of endeavor, Limb et al. clearly show the generating a multicast message (paragraph 51).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send a multicast message, as taught by Limb et al., in order to ensure bandwidth efficiency.

However, Bunn et al., as modified by Cloonan et al., and further modified by Limb et al., do not specially disclose sending the UCD message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Bunn et al., and to send multicast message, as taught by Limb et al., and to send a UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

## *Response to Amendment*

**35 U.S.C.103**

Applicant's arguments filed on September 12, 2007, with respect to claims 1-3, 13-14, 17, and 25-36, on page 11 and through page 22 of the remarks, have been fully considered but they are moot in view of the new ground(s) of rejection necessitated by the new limitations added to claims 1-3, 13-14, 17, and 25-36. See the above rejections of claims1-3, 13-14, 17, and 25-36 for the relevant interpretation and citations found in Danforth et al., disclosing the newly added limitations.

**35 U.S.C.101**

Claim 25 is rejected under 35 US.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 25 claims a signal bearing medium where the specification specifically mentions examples of computer bearing medium

that include media that transmit a carrier wave (Page 35, paragraph 124, lines 3-5). Since the computer readable medium could be considered an electromagnetic signal, the subject matter claimed in Claim 25 is deemed non-statutory subjected matter. Claims 26-36 are rejected because of their dependence on claim 25. Appropriate correction to the specification is required.

***Conclusion***

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*Sai-Ming Chan*
S.C./ sc

April 26, 2007

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